

ENGINEERING HERITAGE AUSTRALIA

NATIONAL ENGINEERING ORAL HISTORY PROGRAM

Transcript of Interview with

DONALD HECTOR AITKEN

Interviewer	Doug Ayre History Development Pty Ltd Mobile 0409 205 130 PO Box 126 North Beach, WA 6920
Transcriber	Mary Macfarlan
Date of Interview	12 January 2009
Venue	City Beach, Perth, Western Australia
Duration	1 hour 35 minutes.

NOTES TO THE READER ON INTERPRETATION OF THIS TRANSCRIPT

Readers of this oral history transcript need to be aware that it is a verbatim transcript of the words as spoken during the interview that was conducted in the form of a natural conversation between the interviewer and the person being interviewed. Some minor changes have been made to facilitate the flow of the document. Some deletions have also been made at the request of the interviewee but do not affect the factual content of the material.

Much of what is said in such interviews relies upon the accuracy of the memory of the person being interviewed and readers should bear this in mind and judge for themselves how factually accurate the material is. The interviewer has sought to clarify or verify facts and statements made during the interview and footnotes have been used to provide further information where this seemed appropriate.

The views and opinions expressed within the transcript are those of the person expressing them in the interview.

Please refer to the notes on the following page to aid interpretation of the transcript.

Note 1

The recording comprises four parts and is on two compact discs (CDs) in 'wav.' format. It runs for a total of 1 hour and 35 minutes.

Note 2

Where the interviewer has used words such as 'Yes', 'Right' or 'OK' as an encouragement, but not as anything else then these words have not been transcribed unless they are relevant for the context.

Note 3

The interviewer has inserted occasional words (which are not in the original recording) into the transcript in order to clarify the context of what was being said. These words are shown in the form [*they would say*].

Note 4

Where a sentence has a series of dots in the text such as this indicates that the speaker paused, the recording was not clear enough to transcribe accurately what was said, there was pause, or the following speaker interrupted what was being said.

Note 5

Numbered footnotes have been provided in the text in order to assist the reader.

Note 6

The interviewer is referred to as 'Ayre' in the transcript and to the subject speaker is referred to as 'Aitken'.

Time	Speaker	
1/00	Ayre	My name is Doug Ayre and I am speaking with Mr Donald Aitken as part of an Engineering Heritage Australia Historical Research Project. This interview will form part of an Oral History Archive.
		Before we begin I need to make sure you understand your rights in relation to the interview.
		Firstly that you may terminate the interview at any stage. Yes. ¹
		Secondly do you understand that you will control access to the information given during this interview by filling in the release form?
	Aitken	Mmhmm. ²
	Ayre	Yes. Thirdly do we have your permission to make a transcript of the recording?
	Aitken	Mmhmm.
1/01	Ayre	Yes. This interview is taking place on the twelfth of January two thousand and nine at Mr Aitken's home in City Beach, Perth, Western Australia.
		Mr Aitken before we go any further may I call you Don?
	Aitken	Sure.
	Ayre	Thank you. Could I have your full name please?
	Aitken	Full name?
	Ayre	Yes.
	Aitken	Donald Hector Aitken. A I T K E N.
	Ayre	Thank you, and your date of birth?
	Aitken	The eighth of February. I just had my eighty fourth birthday the other day. ³
	Ayre	Well we can work it out from there.

¹ Mr Aitken nodded in assent.

² Used in the affirmative throughout.

³ Mr Aitken later advised that what he had said was incorrect and his birth date was in fact the eighth of January 1925 and he was born in Guildford, Western Australia.

- Aitken Nineteen twenty five.
- Ayre Twenty five?
- Aitken Nineteen twenty five.
- 1/02 Ayre Thank you. Now, what I would like to do firstly is have a look at your education and training background so can you tell me a little about your primary school education?
- Aitken Yes that is almost - well it's not entirely - centred around Guildford Grammar School where I spent four years but in Midland Junction where my father was a merchant actually [and] had quite a big business.⁴
- And so I was at the primary school - the primary is Midland Junction State School - and it would have been from the age of six to approximately - I'm hesitating because that's the finish of my primary education - and then I go on to Guildford Grammar School. Which is still primary up to a point and then it became, you know, the final part of secondary education for me.
- So I don't think there's much to be said about, you know, your life at those particular days because you're only a whipper snapper.
- Ayre Yes I understand that. So your primary and secondary education was in the Midland and Guildford area?
- Aitken Yes.
- Ayre And essentially at Guildford Grammar School?
- Aitken Yes. And it was from there that I was able to – and the war was on by this time - I was able to go to the university which was perhaps quite different to what it is today where entry marks and things are much more prominent.
- 1/04 Aitken When I was there it was more of a collective thing. The amount of engineering - in actual fact - I found myself at that particular time being man-powered because the Second World War was on and it was impossible, in actual fact, to actually volunteer for any of the services because you were man-powered.
- Ayre What do you mean by man-powered?
- Aitken By man-powered?

⁴ The business employed 30 people.

The government recognised that after World War Two there would be a need to do a lot of engineering work and hence they wanted to [remain in] control of forty engineers or potential engineers that was the quota for UWA at that particular time.

- 1/05 Aitken And so you had to stay within that, if you like, and if you tried to join the forces you were promptly put back in your box. And the reason for that was they wanted engineering people - a proportion of them - to try and help the reconstruction of all the damage that had been done. And so that was primary and secondary.
- Ayre So, in simple terms then, being man-powered meant that you were allocated to that area of work and you weren't allowed to move out of it?
- Aitken That's right. Part of that time of course was doing a course which led to a Bachelor of Engineering via the UWA.⁵
- Ayre Of course. You talked a little about your father having a business. What did your father do?
- 1/06 Aitken Well it's quite a history in a way and I don't know how far you want to delve into it.
- Ayre Yes please. Yes. I'm interested.
- Aitken I was the youngest of five children, in actual fact, but the [two] elder ones were sort of half sisters if you like because his first wife had died⁶ He originally had a Men's Outfitting [store] in Busselton. where he finally decided - 'cos his first wife was from New Zealand - it was a bit more complex than he thought and there were some aunts in Busselton that used to help out with looking after small fry like me at that particular time.
- 1/07 Aitken And so he moved from - well I don't want to go back too far, because he came from Victoria and the first port of call after that was at Beverly, and he gradually went down to Busselton where he got - well his wife died in childbirth - and he had another. So that's all very rather complicated.
- But he then moved to Midland Junction and bought a store from Ezy Walkin's. I say bought it - he bought the right to it - but they maintained the ownership of it. And from there he developed a Serve Yourself - partly that - and also delivery of all sorts of goods and services.
- 1/08 Aitken And it was during this time and during the Depression days that he

⁵ Mr Aitken advised that the course included hydraulics, civil, structural and electrical engineering and during vacations students were required to undertake construction work in mines such as in Kalgoorlie

⁶ These children were looked after by their aunts.

– that’s my father - had difficulties with people not being able to pay their accounts. It was very common in those days and it led to some great tightening of everything. Because it led to him having a heart attack in nineteen thirty five or thereabouts. He went to a sanatorium in New South Wales, came back, and he had about another year and then a second heart attack [which was fatal] and that was it.

So my mother actually took over the running of this store. And that store serviced all the Swan Valley and also the Midland railway line. Goods and things were sent on that path. And that’s the way it operated for quite some time.

1/09 Aitken My brother had done accountancy and he didn’t want to get involved in running a store. He became a Chartered Accountant in other words and we moved then to [Kinnimont Avenue in] Nedlands. And that was the base from that point onwards. So it’s a bit complicated.

Ayre Interesting nevertheless. So the store that your father had originally owned you said serviced the Midland and the Swan Valley area. Was that based in Midland then?

Aitken That’s right.

Ayre It was, was it?

Aitken That’s correct. Yes

Ayre Alright now I don’t think you had an apprenticeship with anybody did you?

Aitken No.

Ayre No. Alright, so what sort of work experience did you have while you were studying engineering?

1/10 Aitken Only through the teachers that were there and doing for example hydraulic work. This was for leading towards a Bachelor of Engineering over four years time.

I might say in passing the first days of the intake - including me into engineering - was a scare from the Japanese coming down the coast. And the first thing we had to do is dig trenches - air raid trenches - and things like that. That was quite important but it didn’t eventuate so not much more was done about that.

All of this related to apprenticeships is really the staff - the professional staff - that were in the Engineering School at UWA. And they set standards and you had to meet those standards so that

- was really a tuitional problem for each of the staff that were there.
- 1/11 Ayre So did you do any what we would call today vocation employment?
- Aitken I got interested in soils and soils mechanics and that proved later to be the right thing for me, because I enjoyed what I did, and perhaps we'll get round to that a bit later on. But it was something that interested me at that particular time and I spent a fair bit of time at it. And I wrote a thesis, believe it or not. Thesis perhaps is too strong a word. And that was on laterite gravels which subsequently became a very wide spread sub not sub-grade but sub-base course and I had a fair bit to do with that.
- 1/12 Aitken In fact when I got freer the soils laboratory which I established at UWA in actual fact embraced all of those things in fact a long time after that they were actually donated to the university. But I was the fellow in charge of it all at that particular time.
- Ayre So the laterite gravels were used as foundations for roads were they, that sort of thing?
- Aitken Yes. Base course and sub-base course. Because prior to that change most of the roads of that particular era were knapped limestone very tough strong limestone and these guys used to just hammer away [at it] with a sledge hammer and form the edges of the road.
- 1/13 Aitken I'm going - perhaps jumping - a fair way ahead but it was I claim, maybe my colleagues wouldn't agree with me, but I developed the sub-base and base course materials that were used in the Narrows Interchange and everywhere else. And so that was an extension of what I had been interested in before I even got to Main Roads.
- Ayre Alright. Now you were studying at university. Did you do any studies at Technical College?
- Aitken No. No. The course itself was entirely within that - because Main Roads established with my instigation really, later, to establishing a soils laboratory out in Welshpool.
- 1/14 Aitken It's probably not very relevant but the previous Commissioners of Main Roads long before me but the people in between used to go on world trips looking at equipment that would try and discover you know what this limestone was and what sand clay was. Anyway that's a bit of a jump and perhaps not worth persisting.
- Ayre So you graduated with an Honours Degree?
- Aitken Yes. I graduated with an Honours Degree in nineteen forty five.

- That was a compact course because you'd normally take longer than that and returning servicemen came in and they were all out to jump a bit here and there to make up for the lost time when they were in the services.
- Ayre Did you do any postgraduate studies?
- 1/15 Aitken I can't say directly because my interest in roads at that time was sparked by the use of sand clay and I had a lot to do with that.
- It coincided with the arrival of the BP refinery down there and I was actually in charge of all the approach roads and built all the roads in the refinery actually because the government was very keen to establish BP in Western Australia. And so I had a very interesting time in using - you might say the sand - mostly sand and limestone - and using those as basic materials to build a road.
- 1/16 Ayre That's down at the BP site in Kwinana?
- Aitken Yes.
- Ayre Now perhaps we can touch on any Scholarships that you might have obtained.
- Aitken I don't know that. I in actual fact I wrote a thesis of course which was part of an essential requirement to get a Bachelor of Engineering that would have absorbed a lot of that. After that, it was, I went straight from that situation to being an employee of the Main Roads. Main Road Department as it was called in those days.
- Ayre So, just going on a little in your career you had some academic awards and academic appointments I think didn't you?
- 1/17 Aitken Well, yes, perhaps not quite at this stage of time.
- Aitken Most of these things did lead – I've got a list over there I'll give you later.
- Ayre Well can you just describe briefly for me what they were?
- Aitken Yes I can. This list is related to Donald Aitken or Don Aitken's recognition I suppose by other bodies of the value that he was able to bring to his particular position. And this is quite an extensive list headed up by an AO which is an Officer of the Order of Australia.
- 1/18 Aitken An ISO which is Imperial Service Order which was a British Order. An FTSE [which] is a Fellow of the [Australian Academy] of Technological Sciences and Engineering. An Honorary FIEAust, Fellow of the Institution of Engineers, and the CEng

which is a Chartered Engineer.

So that's the sort of list... And there's a copy of it here. Somewhere around here. That embraced a fairly wide range of time too.

1/19 Ayre Yes. Well thank you for that.

So moving on then to talk about work place safety. Can you give me some idea of how standards of safety have changed in the work place since you were a young man through to your retirement?

Aitken Yes. That's a fairly difficult one for me because it goes back quite a long way and I couldn't vouch for the accident authenticity of what I might say. And talking about Main Roads as an introduction to it it's really - the previous Commissioner was a bloke called Digby Leach who was a well known character - very well known.

1/20 Aitken And he followed a policy of extending sealed roads - I won't call them highways but that's what they turned out to be - all over the State. Bitumen roads. And I think, looking back without disrespect to Digby, I think he overdid it at the time because he built these roads throughout Western Australia when he was Commissioner and left it at that. And the next generation, which would have included me, had to really pick up those narrow extensive lengths of road and widen them and where appropriate reconstruct them.

So Digby Leach sowed the seed there of what he wanted to do and he left it to others after his time to do try and do it.

1/21 Aitken As it turned out in the long run most of that work had to be reconstructed because it was built at perhaps too low a standard. To the point - and that work carried on for years after that and then really became the yardstick by which things were done. Now things are different today, of course. That's obvious because things like computers came along later and all those appliances that were so essential to redo things in a different way.

Ayre So that touches on aspects of the safety of roads and their design. What about the safety of the work place - employees getting injured at work on sites. Has that changed over the years?

1/22 Aitken Yes. Initially it was the sort of the realm of gangs and the person in charge. You know for example talking about BP refinery, well, down in that area and I was designated by Digby Leach to look after that part of it. I have slightly lost the train of what I was thinking of but I think it's always ever since I was part of it - way back - really was to make sure that the work force didn't undergo bad practices and things like that.

- 1/23 I mean you relied upon labour – well later an engineer underneath the overall engineering and the foremen were coached and they did courses internally on safety of the staff and men and it was always part and parcel of , you know of considering roads, was the safety aspect of it that we've just been talking about.
- Ayre But I suppose working on roads has always been a problem with regards to passing vehicles really. Not getting run over I suppose I mean. Was that always an issue?
- Aitken Sure and if any mishap even like that happened there'd always be an internal inquiry as to just what went on and to make sure that it doesn't happen for the next generation so it was embossed really locally within the Main Roads Department as it was called.
- 1/24 Ayre Yes, and I suppose most of these fellows would be working out of doors in the heat of the day wouldn't they?
- Aitken Yes they would.
- Ayre How did they cope with that?
- Aitken Well roads, sort of, in the Depression days - before I had anything to do with it – because of the pressure that was on the government to find employment, they had these camps all over the place. Mostly in the hills and places like that and they lived in tents actually and they worked. It would depend. It was worked out so that if a single man got there he didn't get as much interest as ones that are married and got children and that sort of thing.
- 1/25 Aitken And I can remember as a kid being taken on a Sunday drive with my father and family and we used to come across these tented cities if you'd like to call them that. But they were just a means to an end during the Depression years of helping people who otherwise would not be able to cope with things. And that went on for quite a few years after that as well. And it was all over the State too.
- Ayre Must have been a fairly hard life for them I suspect.
- Aitken Oh very much a hard life.
- Ayre Yes, and did their wives and families ...?
- Aitken That's the workmen but the other part of it was the government of the day decided to reduce the salaries and wages of all people employed in the government
- 1/26 Aitken And they were vicious in what they did. They sacked about half. There was a government decree. Things were tough. It didn't affect

me 'cos I was too young.

Ayre And did the wives and families of married men live in the camps with them?

Aitken Ah yes. It didn't happen very much with engineers but it certainly - [with] the next layer down it certainly used to occur.

Ayre Fair enough. Alright so moving on then to the management of what today we call human resources – you and I call people - what was the expectations of engineers and managers of their employees? I mean we talked about these fellows having a fairly hard time how hard were they expected to work when you were a young man?

1/27 Aitken When I was Commissioner for a fairly long time I really expected them to do the job that was set out for them rather than to work forty hours a week or something like that. And it's important - it was thought important certainly by me and shared by others. That that was only part of it but it built up their own ego to some extent and gave it to them on a platter you know. 'See if you can do this?' in other words. 'Level it all up and do it that way'.

So it was pretty - in the remote areas it was pretty tough - and up in the north west [it] was pretty tough going in actual fact. But work used to go on.

1/28 Aitken Contracts hadn't started by that time. I believe that long before my time, you know, they used to allocate pieces of road as a target. A little group of blokes would do it - hand picked and all the rest.

I could talk at some length about sand clay because I was very interested in the possibilities as a young engineer in Main Roads and Digby Leach actually was the sort of force behind it all. And he resorted to when he was a kid, sort of running around in bare feet, you know, and looking at sand and stuff like that.

1/29 Aitken And that rubbed off on to me and so I picked up stabilisation of roads in the country in the main although I could come back to the metropolitan area and that is the use of sand clay or produced sand clay with actual materials which in Western Australia was generally sand.

I mean occasionally you would get laterite gravels and things and they were good in their own right but soil stabilisation was carried out all over the place with a lot of it related to the road to Lancelin. And Digby mustered all of us together - all the senior blokes and the junior people like me to have a one-day seminar out on the road to Lancelin.

END OF RECORDING 1

- 2/00 Aitken And he said - not great value you know to record it as such. But it was a good effort by Digby on this but he didn't quite pick up the fact that when it got into rolling country [then] water would disrupt what he had done. Running down the road.
- And so as it turned out we ended up with a compromise of putting laterite gravels on the edges and sand clay in between the two edges.
- Ayre So the gravel acted as what like a French drain or something did it or...?
- Aitken Well it stopped erosion. The laterite gravel stopped erosion of the sand clay. Cos if you didn't do something - and Digby was a bit dedicated to this and he sort of wouldn't ever take an answer that you needed this from junior staff.
- 2/01 Aitken But it was all over the place. He changed his tune and, well, I worked in sand clay mixes and things all the way out through towards Quairading and way out into the wheat belt.
- Ayre Coming back to your comments about the men working on sections of road I gather from that, then, that these were all day labour people were they?
- Aitken Ah yes. The trucks and things would be owned by the truck drivers and they would bring the material in. They didn't actually get paid anything to do it well to count their own costs.
- 2/02 Aitken They didn't have to encounter Local Authorities to any great extent and that - but it was - and it became increasingly difficult. Well not difficult but it became increasingly necessary to have different stages of development of these sand clay roads in particular.
- And it was all started down there in BP Refinery and we built the roads and used limestone that could be broken up not this very carbonaceous one and we were very careful there to make sure that it didn't become an eyesore - a quarry down there
- 2/03 Aitken And so the quarry came round the corner so that it wasn't obvious from the road. That was the access into what is now Kwinana and beyond.
- Ayre Some of these men working on these gangs must have been characters weren't they? Do you remember some of them?
- Aitken Yes I remember a few of them because they - rather come down

by car or truck or bicycle or whatever to work they used their ingenuity and I knew it was going on but I didn't stop it. They were building a camp actually just about in Kwinana itself and they lived as if it was back fifty years ago.

A lot of work was done on sand clay by me.

2/04 Aitken The sand was there all the time 'cos the sand was degraded from limestone. But further down you needed something to stabilize it and if - something in its characteristic of say pebbles right down to very fine material - and we actually - I'm laughing because we actually got Digby Leach to actually resume a whole lake down there and it was sold to the Crown compulsorily only to get what we used to call lake grit. Now lake grit was coarse sand particles and an amount of marl which was also in that area.

2/05 Aitken And they were mixed and used for all the road work down there.

And those guys in the main were living in a camp that they themselves [had built]. They were scroungers actually and they'd go and get second hand stuff all over the place just to save themselves having to commute backwards and forwards.

So, you know, that worked out pretty well.

Ayre You would have seen a few changes over the years then with the way in which the work was done out on the sites. I mean you talked about gangs of men and camps. It would have changed a lot I gather.

Aitken Well I think so because mechanisation came in and the pick and shovel went out the door.

2/06 Aitken And new methods of using the materials came in and it really was a transformation, if you like, from the unemployment rates back in nineteen thirties and things were - it was mind boggling just what effect it had on families and all the rest.

They lived in tents down on the Kwinana road because it was - I digress just a bit because I was put in charge by Digby Leach of that work in Kwinana and round it.

2/07 Aitken At the same time I was identified as producing a - what would you call it - a widening of a road to go to BP. BP had a huge influence. They were given three thousand acres of land down there. You know, this was part of them coming from England.

Ayre When was this?

Aitken That would have been in about nineteen fifty thereabouts. Yes

about nineteen fifty. But I was asked, or told, 'You build the roads' because the roads were built by the government of WA not by BP.

And this was the pattern all the way round that BP you know. They got a pretty good deal out of all this because the government was wanting - very badly wanting - that refinery

2/08 Aitken And there were a thousand houses built in the Kwinana township area. And so I was involved in all this with Margaret Feilman actually. She was the Town Planner. But I was told to look at the road from Fremantle down through Kwinana to see whether it could be widened.

It didn't take me very long travelling up and down there to realise that there's no hope in the world of widening something that had been there for fifty years or more.

But it proved [correct] and I went inland as an alternative and that in actual fact became the Kwinana Freeway.

2/09 Aitken The actual location of it – well, out from what I was talking about earlier - and I think in some small way that had an influence on what later became the Metropolitan Region Planning Authority.

Anyway that's an aside and that's how it all started and the route of the Kwinana Freeway future – the future of it - that was all pushed away from where it was near the coast. Quite interesting.

Ayre You mentioned the change in technology with earth moving and machinery moving away from the pick and shovel days that they used to have. What other changes in technology did you see in the work? I mean not just out on the site but also in the office?

2/10 Aitken I just got to generalise somewhat because this exercise we did around Gingin - from there to Lancelin - it was very shortly after that that a bloke called Rhodes who was well known in earth moving and things. He actually introduced the first scraper in to Western Australia

Ayre What was his name again?

Aitken Rhodes.

Ayre How do you spell that?

Aitken R H O D E S, I think. Rhodes.

Ayre Thank you. So he introduced the scraper did he?

Aitken Yes he introduced them. You'll just have to be sure in checking on

that that it was Rhodes and not some Bill Bloggs or some one. But he certainly introduced that and it was the reason why this great wongi⁷ went on up there.

- 2/11 Aitken I mentioned earlier about Digby Leach and everybody in the sand clay areas and this was a revolution this use of [a scraper].
- He bought it really because it was necessary up in Kalgoorlie to fill up one of the falls that had occurred in one of the shafts and he apparently suggested that he could do it at a much lesser cost than that and they accepted him and that was the basis of how he expanded in actual fact.
- I jumped around a little bit in all that.
- Ayre Coming back to the technology, though, the scraper was one new thing that was introduced. What about things like compactors for the road surface? I mean to me as an electrical engineer I think of a steam roller but I'm sure there were more sophisticated things.
- 2/12 Aitken Well the steam roller died fairly hard because it was used for a long time until this more modern equipment came along with scrapers and things like that.
- And so that all, it really was led from the top by Digby Leach and Hector McGuire who was the Chief Engineer and then lesser lights like myself down the line a bit. And it was used quite extensively.
- I actually claim to have been the one that - of the engineers - junior engineers, in Main Roads who [was] in actual fact widening roads where possible. And of course the prime example of this was when - much later when - the Stephenson Freeway started to get built.
- 2/13 Aitken And that was, oh that's a different story which has its base - in which Don Young had a lot to do with the heritage side of it in actual fact.⁸
- I'm jumping around a bit but it was very, very important then and later. That because of the river being so high in water and things - in salt - it was thought then by those within Main Roads that knew the details of how to go about the consolidation of this mud layer that was there. And in actual fact it was a unique thing.

⁷ Meeting.

⁸ Mr Young advised that he had not been directly involved with planning or execution of the sand draining process, which was developed by the bridge engineer Mr Gilbert Marsh. Mr Young prepared the successful nomination of the Mitchell Freeway Stage 1 for a National Engineering Landmark and highlighted the unique scale of what was a world class engineering achievement whereby the installation of 43,000 sand drains resulted in an average consolidation of the Narrows Interchange area by some 6 metres.

- 2/14 Aitken Don would tell you all about it 'cos he launched into it with the request.
- It was decided by the guys that knew what was going on to put in sand drains. Sand drains were about that size in diameter.
- Ayre I think you're showing about eighteen inches.
- Aitken And there are forty two thousand eight hundred sand drains and that lowered the level of the whole thing by about - I'm only guessing now but by - twenty or thirty metres.
- And it was the basis actually that Don Young was able to make a case - and a very good case that he did make - on the uniqueness of this. Because no one else in the world had attempted that and that's how it came round as a heritage [issue].
- So that's the sort of [interlock] between the two.
- 2/15 Ayre So how did a sand drain work then?
- Aitken Well it was free water. The water table was right down a hundred feet or something like that down and by loading it up - and these sand drains were spaced, well, there were forty two thousand of them - you can imagine they're almost next door to each other. But that pressure from the top actually forced the water to come up the sand drains and scattered from there.
- Ayre So the sand drain itself was a vertical pipe was it?
- Aitken Yes.
- Ayre Embedded in the sand?
- Aitken You put a great big pipe in that.
- Ayre Eighteen inches diameter, yes?
- Aitken Yes, and that goes down to the bottom. Then you would pull that up [and] shift it to the next site. You know they just had to do it fairly methodically of course.
- 2/16 Ayre So how did they force the water of it? Was it by building up on the ground?
- Aitken You're actually putting sand on top again.
- Ayre So you're compressing it?
- Aitken You're compressing it. And no one in the world has done that. And

- that was the background to the award that came out, you know.
- Ayre And forgive me for asking because I'm an electrical engineer but having compressed the sand and got the water out I presume it then stays compressed does it?
- Aitken Yes. Yes. It reaches an equilibrium point. Others would tell you that were more directly involved in this than me that it was a really Herculean thing to do at that particular time. 'Cos Gilbert Marsh who was the bridge engineer he was away overseas.
- 2/17 Aitken Ken Michael was away overseas - this was in their junior days - and so it opened up these people being away in some cases up to a year.
Certainly Ken Michael was in London and he did a PHD and all sorts of other honours. He was a bridge engineer. And Gilbert Marsh was he was bridges but he was also efficient in the sand drains and pressures and things down in the ground.
- Ayre So is a similar technology to a sand drain used to compress, say, peat where there's been swamps and marshes?
- Aitken Ah, there's a very soft material down underneath this interchange and a lot of that was drained away by forcing it up to the top.
- 2/18 Aitken And there were other sites like that as well 'cos the Narrows Bridge was being built by different group and that posed a few problems for them too. But they overcame that.
- Ayre You would have seen some technological changes in the office though?
- Aitken Technological changes?
- Ayre In the offices where you worked, surely?
- Aitken Yes. Well, of course, computers. Main Roads had the first computer in Western Australia. Did you know that?
- Ayre No, I didn't. No.
- Aitken Yes and they got it from Westinghouse or somewhere. It was an unusual thing but they actually got it and put it into operation. And it was very cumbersome by today's standards but it was the start of technology in Western Australia, in actual fact, that computer.
- 2/19 Ayre So why did Main Roads obtain it?
- Aitken Ah through the initiative I think of one person in the meantime with all this activity going on here there and everywhere there

were people who were specialising in Main Roads to go and do this and that and the other and that's how it came about actually.

They found this Bendix. It was called a Bendix computer like a washing machine.⁹ It was actually given to the Technical School in St George's Terrace.

Ayre So what did they use this computer for then?

Aitken Just to do calculations.

Ayre Engineering design calculations. This sort of thing?

2/20 Aitken Sure and it was just the first one and it was very crude and out of date almost. So it wasn't long before it was given to - I think it was - Perth Technical College.

Ayre You'll be telling me it used to use punch cards and paper tape next.

Aitken Yep.

Ayre Did it?

Aitken It used to have them for sure. Because you'd punch all this and feed it in and then the machine would actually read the pattern that was there.

Ayre Yes, well, I was brought up with one of those when I did my engineering.

Okay. I think if we have a break there and just take a breather.

END OF RECORDING 2

3/00 Ayre Now Don, we were talking in our break there about the establishment of Tech Aides. Would you like to tell me a bit about that, how that came to pass, and what they were?

Aitken Yes, I'll give you a little bit of information about it.

When I was Commissioner - and I was Commissioner at the age of forty: I think it was something like that - and I had a feeling too that a lot of the senior blokes were inundated with paper - requests for this and that and the other. And yet it was important that the young blokes, in actual fact. Let me put it another way.

⁹ Not literally like a washing machine but with the same name, Bendix, as the manufacturers of a popular washing machine at the time.

- 3/01 Aitken I introduced the idea of having a Technical Aide and there were a number of them that came after that. But they were limited to usually about a term of twelve months in which case they would do any work connected with engineering that comes across the Commissioner's desk. And then when time came for a change-over - there was a list - [and] the guy who was incumbent in the job had to identify who should replace him. And that made them all think a bit about it.
- And in actual fact that's exactly what happened. They didn't do any routine correspondence work [but] they worked on things that had a technical nature to them.
- 3/02 Aitken And so there were, I think over a period of time, there were probably maybe eight or ten of these including Bill Marmion was one of them who's now the member for Nedlands.
- So it's one of the best things that I can look back on and say this was something which is a great basis for Main Roads onwards from that time.
- Ayre So these people became very useful members of the engineering team?
- Aitken They normally got promoted up and a career ahead of them whereas they handle the technical sides, you see, the relationship with other States for example. They had people there [of] a similar nature called a different thing.
- 3/03 Aitken And when we did go over east, and [we] needed to do that fairly frequently in my latter times there, they would come along and they would make notes of what they thought was relevant to the discussion that was being held.
- And so they had a very complete and full range but only for twelve months because if you put them in for longer than that people would say that they're getting cheap labour and all this sort of thing.
- I wanted to give them the side of the Commissioner's position for them to translate that into some workable thing technically. And I think if you asked all those guys - say eight or ten of them or something like that - some of them would have gone by now they would say it was one of the most interesting jobs they had in Main Roads.
- 3/04 Ayre Now, building roads, I suppose through Western Australia, you would have got involved in the conservation of the natural environment I presume?

- Aitken Yes.
- Ayre Can you tell me a bit about that?
- Aitken Different people got involved in different ways so there's not just one person doing it all there's a whole heap of them. And they're still around these guys they're retired now but they had the enthusiasm, you know, to get things done. And that really related to conservation of the edges of all the roads - say to Albany Highway and the rest.
- 3/05 Aitken And identification of all the shrubbery that was there that was all documented and nobody was allowed to go and pull them out without just cause.
- So there was a reasonably narrow road reserve the Albany Highway and yet it all worked out so very well. Drainage was an important thing and the blinking road reserve was only sixty six feet so it wasn't easy to maintain the existing flora and fauna. But it was embraced by all of the staff in the Districts [with] the general pattern being conservation just as a key word to the whole thing. And it became later, even after my time, it became later that this was an extremely important part of things that Main Roads was doing.
- 3/06 Aitken Some of these things would be written in the history of Main Roads and the current Commissioner would know. He might be prepared to two hours with you like we are together. But he's authorised the new history.
- There's the old history and the new history and the new history's built on the old history and so there are two volumes – actually. Two volume of history - which are pretty heavy going because they are two or three hundred pages each. The second one was a bit less.
- Ken Michael had a lot, just quietly, had a lot to do with the first one.
- Ayre Did he?
- 3/07 Aitken Yes he probably had a bit to do with the fact that they named that building after me down there the Don Aitken Centre. It's up in big letters. I thought they'd have ripped it down by now but one day [it will get] ripped down but that's the way it goes.
- But Ken had a lot to do with that. At that time he wasn't just a bridge engineer he was getting involved in the East Perth Development Authority and these things.

- Ayre You mentioned soil mechanics as being your original early interest. I think you went overseas and studied didn't you?
- 3/08 Aitken Main Roads is part of - and I had something to do with all this - part of an Australasia Group you might say In South East Asia there's a group that embraces all of the countries in that area of which Main Roads had dealings with - and including Japan.¹⁰
- Now that's in South East Asia but on the other side in France they were making contacts with people in North America and all over the place. And I became the President of the Road Engineering Association of Asia and Australasia and I did that for three years I think. And that took me all over the place.
- 3/09 Aitken And in the other countries there were centralised sorts of things that were similar to what we were doing up there with the Japanese and others. It's become quite a big thing.
- So I had to go overseas quite a bit on that score. I was only President for two years I think. But it meant flying up to Kuala Lumpur where the Headquarters was and then going to meet someone in the Philippines or someone in Hong Kong and of course I went to Tokyo as well.
- Ayre As a young man did you study at all in the UK?
- 3/10 Aitken I'm only laughing in advance because I went to England - [I'm] trying to get the dates right in my mind - nineteen fifty, I suppose, fifty or fifty one. Fifty one was the Festival of Britain. That's right so I asked for leave of absence for two years 'cos I wanted to see how the other world lives. And the reaction to that was that two years is too long to be without you in the position you've held and so they wouldn't - to start off - wouldn't agree.
- So I then went on my own self 'cos I really did want to see how the other half lived. And so I went off to England entirely under my own steam.
- 3/11 Ayre So did you resign from your position then?
- Aitken They allowed it to go on hold, sort of thing.
- Ayre Right, so leave without pay?
- Aitken Leave without pay. So I went over there and I knew a few West Australians over there.
- I went on a ship. Took seven bloody weeks to get to Southampton.

¹⁰ The reference here is to the Road Engineering Association of Asia and Australasia.

Got to Columbo - we were in Columbo for two weeks I think [as] Columbo had a bloody strike on. And the Moreton Bay - it was the old Moreton Bay - it was chock-a-block full of lovely young ladies. Because the men were very shrewd they'd go off and play cards [by] themselves, you see, while the girls sort of chatted away and went on.

- 3/12 Aitken Anyway we got to Southampton about to board the train and I wouldn't put this in the record but my mother said 'Oh you can't go to England - 'cos we lived in near, you know Midland near the Swan - so you must take some bottles of sherry.'¹¹ So I had a case of sherry - six bottles, not ten or twelve, and they held the train up for me to get there and I finally said we're not going to solve this I'm going to miss the train you can have the sherry and I'll get on the train.¹²

So away we went and I lived in a house in South Kensington that had a couple of girls who rented it and I used to have to sleep on the floor and that sort of thing. But it was quite a different story.

I had a sister incidentally who lived in up in Yorkshire - well a half sister in actual fact.

- 3/13 Aitken And so the civil engineer here, in UWA, he had some good friends over there and he wrote them a letter saying that this young bod's determined to find out what goes on would you help him.

So he got me right. He took me to one of the posh clubs for lunch and things like that and I got a job with his group. In actual fact [I] worked in London Airport, Heathrow.

And I was fitting in pretty well with the locals and doing all those sort of things and used to play village cricket and all sort of things. And all this was going on nicely. I was enjoying life and when suddenly a letter came from Main Roads to me.

- 3/14 Aitken To see whether I would look at traffic lights in England and we'll put you on the payroll for one week or something. And I wrote back and said that's absolutely ridiculous. I know nothing about traffic lights and I can't really go to the Ministry of Transport and not know anything about anything. They would just throw me out because the Metropolitan Police were part of all this so they'd throw you out pretty fast. 'Cos they were pretty well advanced in pedestrian crossings and all these sorts of things.

And so I wrote back and said that I'm very interested in your proposition about traffic lights I'd like to undertake that task but I

¹¹ The implication here is that a person living in a wine producing area such as the Swan Valley could not possibly travel to England without taking a gift of some local sherry.

¹² This discussion took place with a Customs Officer.

- can't possibly do it in the space of two weeks. I said I've got to go and meet all these important people and I've got to have some knowledge of what we're doing and so that's how that started.
- 3/15 Aitken So I went to Road Research Laboratory at Harmondsworth 'cos I was interested in it. They would've given me a job if I'd asked for it but I stayed there for six weeks or something like that doing with their staff doing work on traffic lights in London. So ultimately I wrote a report about it, of course, back here,
- 3/16 Aitken And said that - you know this, and that, and the other - I believe from what I'd learned that it'd be quite appropriate to put traffic lights in some of the centre of Perth.
- So I put the first five sets of traffic lights in. Under the West Perth subway in actual fact. And then we put three in William Street. And they were coordinated. They were linked even back in those days. This was the things I'd learnt from Ministry of Transport over there. Don't muck around with fixed time signals do it on a progressive system. And that's what I did. I put the first five sets in, in Perth, in actual fact.
- Ayre So how did such a system work then? I mean today we'd have computers linking it wouldn't we, but how did they do it then?
- 3/17 Aitken Well they had a tube on the road actually which was activated by a puff of air onto a controller on the footpath. And so you could count traffic that way. You could count people jumping up and down on the pipes and all that sort of thing.
- So I came back with all sorts of wonderful ideas of introducing them here there and everywhere. But those five went in. Prior to that it was just the coppers you see. Coppers used to stand in the middle of the road on a tub and wave the traffic on.
- Ayre And direct traffic didn't they? Yes.
- Aitken And I wouldn't want this to go on the record but I was responsible for taking all the trams out of Perth.
- Ayre Oh right so it was all your fault was it?
- Aitken Yes.
- Ayre Why were they taken out?
- 3/18 Aitken Oh well because you couldn't get traffic movement - you might say progressive movement - along a road unless you had control of everything that's on the road. That was really about what it is.

- Aitken The roads are pretty narrow, you know, and Hay Street was only - most of the roads are one and a half chains but the one in Hay Street was only about half of that.
- Ayre So when were the trams decommissioned then?
- Aitken This would have been about in nineteen fifty two or thereabouts.
- Ayre Yes, it's interesting.
- Aitken Well, it's a varied sort of talk we've had because of sort of things that I've been interested in and trying to recall some of them. They are all accepted in the after they got out of the nest egg and got down to work again. Out of all that that we've been talking about a varied sort of career you might say in Main Roads.
- 3/19 Ayre So apart from the issue with traffic lights in the UK what else did you learn over there?
- Aitken I worked on Heathrow Airport at the time at the time that the Comet aeroplane had been developed. And I was given a job with a chainman and I said where do we pick up with the map or plan. I said where's this critical point and he pointed out - there was an Irish guy 'cos [there were] a lot of Irish in England at that particular time - and he said that's where it is. That's where the peg is underneath the water there. And I had to go out and crash my way through a pond of ice to get orientated to what I wanted to do with a theodolite.
- 3/20 Aitken And then the locals gave me membership of the airport drinking sessions so I'd go down there and I see these jokers and they're all putting their pot on the heater.
- Anyway to cut a long story short we only had access to the main runway in Heathrow for no more than about three minutes at a time so we had to lie down on the edge of the runways and when the plane got through - and there weren't as many planes in those days as there are today - you'd rush out with a theodolite flat out into the middle got the reading and off, with the bloody control tower flashing at us all time, you know, 'get off the runway'.
- The tunnels underneath Heathrow were being built at that particular time. Yes anyway that was just something that was a side issue to it all.
- 3/21 Aitken I played village cricket down there too. I used to go to Surrey and [you] used to, you know, get the most out of your visit.
- Ayre Yes why not.

- Aitken So I was only away about eighteen months I suppose. Something like that.
- Ayre You talked about tunnels at Heathrow but in your engineering career here in Western Australia did you do any work on bridges and culverts?
- Aitken Producing?
- Ayre No, bridges and culverts. Did you work on those at all?
- Aitken Not over there. It was concentrated on roundabouts and things like that.
- Ayre Okay. But what about here?
- Aitken And drainage etc.
- Ayre What about in Western Australia?
- 3/22 Aitken I think it was a sort of steady if not spectacular increase going on a lot of the time. And of course had, you know, that centre that's called the Don Aitken Centre, see, that was put up for Main Roads accommodation actually because Ken Townsing was the Under Treasurer. And he said 'You can't do this and that and the other'. Anyway we did do this and that and the other and it was much later than that that it came about that they'd stuck my name on it.
- Ayre Yes. But I was just alluding to the fact that part of one of the components of building highways is bridges and culverts, and you talked a lot about foundation materials, and you talked a lot about drainage. Were there any major bridges built for highways?
- 3/23 Aitken Not at that particular time. They came a little bit after that. And like the timber bridge at Fremantle that was propped up I don't know how many times. You know it was beyond its date - its retirement date. That was just one.
- Ken Michael and Gilbert Marsh were the two people that essentially got bridge building and bridge maintenance onto a proper keel and they became responsible for all bridges - culverts not so much so because there were less of them and because they were on the listed roads system.¹³
- But you could talk for a long time about the Stephenson plan for Perth.

¹³ It is worthy of note that there was an extensive program of bridge construction, including the Stirling and Mt Henry Bridges, which took place during the period from 1965 to 1987 in which Mr Aitken was Commissioner of Main Roads.

- Ayre Well tell me a bit about it please. I mean that is of great interest.
- 3/24 Aitken Because Digby Leach was very keen about it in actual fact because to De Lew Cather and Company, an American company, wanted to run a freeway on the other side of the railway all the way through Northbridge out to Leederville or Subiaco and Leederville then Subiaco and all the rest.
- Ayre You say the other side. Do you mean on the north side of the railway?
- Aitken Yes. And then there was emphasis put on further roads to the north in actual fact. So that with the – there was a lot of controversy about it because people wanted everything but they weren't prepared to pay for it and they weren't prepared to do much about it except to go [and] moan all the time.
- 3/25 Aitken But the Stephenson Highway that was periodically after some years was well became the plan for Perth in actual fact. I went to the United States actually with a bloke called Bill Kelliher I wasn't satisfied at that time that De Lew Cather, which was an American firm, were really understanding our situation here. So I went with Bill Kelliher went off to the United States and went in God knows how many [months] - I was away for three months - I was just about bloody dead by that time. I was due to go to Japan at the end of it and I said I just can't muster anything to do with Japan.
- So I went to look at all cities that were approaching a million in size and there's plenty of them in the United States. And I came away.
- 3/26 Aitken I went to Sweden first to get a feel for what the European situation is in respect of planning of roads. So then over to the United States and then went from one county to another. And it was a terrible journey for me because I was having to write home to my wife - and all the kids wondering where I was - and all this sort of thing. And I had to do my washing at night and I was just about stuffed.
- But I went and looked very carefully with Bill Kelliher. We drove from one side of America to the other - west to the east, east to west - and from that produced a report dealing with dealing with the future roads of Perth.
- 3/27 Aitken And it had to be done carefully because Stephenson was still around in those days. It was sometime after that that he did die but it was [politically sensitive].
- I came up, back, with the idea that the road reservations were not quite wide enough for multipurpose use. But we then progressively built the highway right up virtually almost up

equivalent to Yanchep. You could talk for hours about the Stephenson Highway and the Stephenson plan for Perth and, in the main, I've got to say that he did a pretty fair job but he was very much anglicised if you could put it that way. He was Professor of Planning [at] Liverpool University.

- 3/28 Aitken And so it went on and we did our own. Well there was a subsequent plan for Perth put out after that period in actual fact because Stephenson recommended that the railway route go - it goes out through Leederville to Scarborough and Digby Leach didn't think much of this idea and he got it squashed actually but it's a pity looking back that it wasn't done because it would have made quite a big difference to all the suburbs and the rest.
- But you could talk for a week on the Stephenson Highway Plan for Perth.
- Ayre So in a nutshell what was his highway plan? What did it consist of?
- 3/29 Aitken It consisted of a whole lot of ring roads round the city. Different ones and interlocked at grade between them all. There's Roe Highway for example - named after Septimus Roe - that went from - I'd better get it correct where it was. It came out south of Fremantle along that sort of access along there and that was designated later as an arterial road. And it went out to what's now the Gordon Reid Highway up north and that's virtually a great big arc or ring almost. And there are much lesser lights all the way through it.
- Ayre So that's part of Stephenson's inheritance then?

END OF RECORDING 3

- 4/00 Aitken Ah yes. Stephenson he argued, of course, about people changing what he'd done and he was a most unhappy man by the time he died.
- Ayre So the freeway system - as we know it now - the Mitchell Freeway and the Kwinana Freeway - how were the plans for those established?
- Aitken They were really established by the Metropolitan Regional Planning Authority of which I was the Deputy Chairman. The other Chairman was a bloke called McKenzie who was the Mayor of Fremantle.
- 4/01 Aitken But it was implemented essentially between the Town Planning Department and the Main Roads Department. Now we each had,

sort of, authority over finances to buy up all the buildings that were in the line of that future highway.

Because you had to demolish an awful lot of buildings - commercial mostly - but it was done progressively and quietly and there was a lot of arguments with Bunnings and people like that it just went on and on and on but finally a solution was found to what we've been talking about.

4/02 Aitken And going back to the trip to the United States I concluded in my mind when I got back here that because we'd had some American consultants the widths laid down in their report really were too generous in space.

So in actual fact I had a bit to do with it as you know and I actually personally reduced all the widths provided that there was adequate [space] vehicles and it was wide enough to take some public transport and that's how the railways got put in.

Ayre So that was anticipated?

Aitken Yes

Ayre Alright well thank you for that.

4/03 Aitken We've been pretty rambling what I've been rattling on about.

Ayre That's fine it's not a problem.

You had a long and distinguished association with the University of Western Australia didn't you?

Aitken Yes.

Ayre Could you tell me a bit about that please?

Aitken Yes, does it matter where you start from? I suppose you start from the fact that you were a graduate in nineteen forty six with a Bachelor of Engineering - a Bachelor of Engineering Science I think it was called in actual fact in those days. That sparked and I didn't emphasise that that soils laboratory that was there I actually put - did the work necessary to get it done as part of the Engineering School.

4/04 Aitken That's another little aspect of it and so my interest.

And I lived in St George's College for four years which was quite an experience in itself to a young bloke from Midland. But it was one of the happiest days of my life was my residence - my four year residence - in St George's College.

So all these things add up, ultimately, to a huge respect for UWA. Leaving aside the staff down there you know you could go on forever talking about the individuals that were involved. But there were a whole lot of buildings built temporarily.

4/05 Aitken You might say, just before the war and used by the American Navy and all sorts of people. And they converted them to testing machines [for] tensile strengths and all those sort of things.

Now I became increasingly interested in the University and the Soils Laboratory because I'd written this thesis of mine on gravels. Everyone had to do a thesis in those days so I just did it on gravels and then broadened beyond that somewhat. And I shared space in the - in one of those outdoor Nissen hut things - with the Engineers Club. So all these [made] contacts in actual fact and I knew a lot of people in the University of WA seeing that I was there for five years or something.

4/06 Aitken And so I just became increasingly interested, you might say, and then a little bit more involved than I had been just as a matter of interest. And so I put my hand up for appointment to the Senate as a student. I think it was as a student. So that was how I sort of got into that and maintained that sort of activity you might say. Over, quite over a number years till in actual fact I got appointed to the Senate on a poll thing.

4/07 Aitken Ken Michael came along after I'd been there for quite a long time and I actually put him up for the Senate myself. But he got elected the next year and he's been there ever since.

So I went through the rigmarole of the Senate. How they did their business. I was Chairman of the Buildings Committee and they all took up a fair bit of time, in actual fact. So, eventually I, you know, I was eventually appointed by the Senate to become Pro-Chancellor.

4/08 Aitken And so I would have taken that task on board for, I suppose, four or five years or something like that. And then I became Chancellor built on that sort of basis. But all the meantime it was taking up a fair bit of time and I was chairing Senate meetings [and this] wasn't easy in those days because you're supposed to know all about it from the Chair and correct people around the table and all the rest.

Today they have a totally different system they've got a totally different Chancellor, Chaney,¹⁴ and he's Chairman of the National Bank of Australia. He's an extraordinary bloke actually. He can do

¹⁴ Mr Aitken advised that he intended to refer to Michael Chaney.

all sorts of things.

Anyway I continued on and they gave me an Honorary Degree sort of as a farewell gesture you might say but I've maintained an interest.

Ayre Just coming back to your position of Chancellor. Correct me if I'm wrong but I think you were the first engineer elected to that position weren't you?

4/09 Aitken I think so I've only said I think so because it wasn't Chancellor it was Vice Chancellor. They didn't have a permanent Vice Chancellor they used to take it in turns one year at a time.

This is a bit off the track a bit about what we're talking about. And Whitfield¹⁵ Court which is the big spread of grass looking at that beautiful building, yes, I'm just trying to think to make sure it's accurate. I stayed on until I was given an Honorary Life membership of UWA.

4/10 I suppose that covers it all in actual fact. So all these activities take up a bit of time.

Ayre Oh indeed they do. I mean, you had some involvement with the National Association of Australian Roads didn't you?

Aitken Yes.

Ayre What did you do there?

Aitken Ah well they'd come from different States and I've actually resigned from it because - the IRF it's called - it's the road authorities of each state [who] send one person [each] there and they discuss things of common interest. And [that is] where these Tech Aides used to come in, in actual fact, 'cos they'd be hovering around waiting to be told what was happening and the like.

4/11 Aitken So there's an International Road Federation that Australia - it's an international thing - and I got named as I think the first one from Western Australia as a as the representative virtually on the International Road Federation

Ayre Right okay. Alright Don. Well that's been a fairly wide ranging discussion but very interesting.

Aitken A lot of bull dust in that.

¹⁵ The name is actually Whitfeld named after Hubert Whitfeld who was Foundation Professor of Mining and Engineering at UWA in 1913 and Vice Chancellor 1913 – 1915 and 1925 – 1927.

Ayre Oh, you do yourself discredit.

Before I wind up is there anything you'd like to ask me?

4/12 Aitken Ah only in respect of how you would get that gaggle of words - if you like a lot of them over last couple of hours - into perspective of, you know, what their real use is or value is.

Ayre Well my role is to produce a recording - a voice recording - and also I'll produce a written transcript which will set out what we've said. And I'll put footnotes on it to elaborate various comments. And I'll ask you to check it for facts and figures and dates and this sort of thing.

Aitken 'Cos it's pretty rambling in actual fact wasn't it?

Ayre Yes, well not unusually. The reality is that some time in the future a historian may sit down with a document like that and find it very, very interesting and, of course, we're looking a long term in the future.

Aitken Does it ultimately get put into the Battye Library.

Ayre Yes.

4/13 Aitken Well, it's not translated into well - I'm not sure well - I know my wife's stuffs all there in the Battye Library. It just goes in verbatim I take it?

Ayre Yes.

Aitken You don't have to fiddle about with it?

Ayre That's correct.

Alright. Well thank you for talking to me. That's been very interesting and I hope you've enjoyed it as much as I have.

Aitken Yes, well, I've sort of unloaded a fair bit I suppose of memories [that] came back again.

Ayre It's surprising what you remember isn't it?

Aitken I hope it's accurate.

Ayre Thank you.

END OF RECORDING 4 AND INTERVIEW.

